

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A wave device for supporting electromagnetic waves, the device including:

a conductive plate for supporting electromagnetic waves;

a first pair of inputs positioned on the conductive plate for setting up therebetween a first standing wave therebetween supported by the conductive plate;

a second pair of inputs positioned on the conductive plate for setting up therebetween a second standing wave therebetween supported by the conductive plate and positioned such that the input signal of each of the first and second pairs of inputs is unaffected by the state or impedance of the other of the first and second pairs of inputs; and

an output positioned on the conductive so as to receive power from both the first and second standing waves.

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3. (Currently Amended) A wave device according to claim 2, 1 wherein the plate is mounted parallel to a grounded structure and is separated from the grounded structure by a dielectric.

4. (Original) A wave device according to claim 3 wherein the device is constructed as a microstrip structure or a stripline structure.

5. (Currently Amended) A wave device according to claim 2, 1 wherein the plate is a polygon having an even number of sides and each respective pair of inputs is connected across an opposing pair of sides.

6. (Currently Amended) A wave device according to claim 2, 1 wherein the plate is circular and each respective pair of inputs is connected to the plate across a diameter of the plate.

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7. (Currently Amended) A wave device according to claim 1, wherein the output is positioned at substantially the antinode of the device.
8. (Previously Amended) A wave device according to claim 1, wherein (the distance) between a pair of inputs equals an integer number of the wave length of the wave transmitted by the inputs.
9. (Previously Amended) A wave device according to claim 1, further comprising power dividers for providing the pairs of inputs from the signal sources.
10. (Previously Amended) A wave device according to claim 1, further comprising one or more additional pairs of inputs for setting up additional respective standing waves.
11. (Currently Amended) A method of operating the a wave device for supporting electromagnetic waves, the device including a conductive plate for supporting electromagnetic waves, a first pair of outputs positioned on the conductive plate for setting up therebetween a first standing wave supported by the conductive plate, a second pair of outputs positioned on the conductive plate for setting up therebetween a second standing wave supported by the conductive plate and positioned such that the signal output from each of the first and second pairs of outputs is unaffected by the state or impedance of the other of the first and second pairs of outputs; and an input positioned on the conductive so as to provide power to both the first and second standing waves according to claim 1, as a splitter, the method comprising the steps of:

providing a power input at the input output of the wave device and receiving divided power output from the first and second pairs of outputs inputs.
12. (Currently Amended) A method of combining electromagnetic waves comprising:

arranging a second pair first pair of inputs across a conductive plate of a wave device so as to set up therewbetween a second standing wave supported by the conductive plate therewbetween;

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arranging a second pair of inputs across the conductive plate of the wave device so as to set up therewbetween a second standing wave supported by the conductive plate therewbetween such that the input impedance of each of the first and second pairs of inputs is unaffected by the other of the first and second pairs of inputs; and

arranging an output at a position on the conductive plate of the wave device so as to receive power from both the first and second standing waves.
